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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,687	07/24/2003	Masateru Yamamoto	116661	9939
25944	7590	06/16/2005		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER NGUYEN, TUAN N	
			ART UNIT 2828	PAPER NUMBER

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/625,687

Applicant(s)

YAMAMOTO ET AL.

Examiner

Tuan N. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 18-20, 23-29 is/are rejected.
- 7) ☒ Claim(s) 16-17, 21-22, 30- 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 07/24/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In responding to applicant's response to restriction 05/12/2005 "that a thorough search for the subject matter of any one Group of claims would encompass a search for the subject matter of the remaining claims" has been considered. Restriction requirement has been withdrawn, for the claims encompass device and method of fabricating of the same subject matter.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or non-obviousness.
3. Claims 1-15, 18-20, 23-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai et al. (US 6201825).

With respect to claims 1,7, and 23 Sakurai et al. '825 shows in figures (1-5) and discloses a surface emitting semiconductor laser comprising a substrate(Fig 1: 12), an active region (Fig 1:

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20) and a current confinement layer (Fig 1: 32) included oxidized region disposed between first and second mirrors (Fig 5: SELECTIVELY OXIDIZED LAYERS)(Fig 1: 34), a mesa structure including at least the second mirror and confinement layer (Fig 1: 26), and an inorganic insulation film covering at least a side surface of the mesa structure (ABSTRACT; Fig 1: 34). The claims further require that the insulation film having an internal stress equal to or less than 1.5×10^9 dyne/cm². Even though, Sakurai et al. '825 did not directly disclose the internal stress of the insulation film, it has been held that where the general conditions of a claim are is closed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Since claim 23 recites the same or identical elements/limitations it is inherent to use patents '825 to recite the method of fabricating a surface emitting semiconductor laser, product by process.

With respect to claims 13, and 18 Sakurai et al. '825 shows in figures (1-5) and discloses a surface emitting semiconductor laser comprising a substrate(Fig 1: 12), an active region (Fig 1: 20) and a current confinement layer (Fig 1: 32) included oxidized region disposed between first and second mirrors (Fig 5: SELECTIVELY OXIDIZED LAYERS)(Fig 1: 34), a mesa structure including at least the second mirror and confinement layer (Fig 1: 26), and an inorganic insulation film covering at least a side surface of the mesa structure (ABSTRACT; Fig 1: 34). The claim further require the inorganic insulation film including a laminate of a first insulation film having tensile stress and a second insulation film having compressive stress. Even though, Sakurai et al. '825 did not directly disclose the first and second insulation film or its strain and stress, it has been held that where the general conditions of a claim are is closed in the prior art, in this case is the inorganic insulation film, discovering the optimum or workable ranges

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involves only routine skill in the art; in addition, it is inherently obvious, that all semiconductor layer(s) has some amount of strain and stress create by adjacent layer. *In re Aller*, 105 USPQ 233.

With respect to claims 2, 8, 14, 15, 19, 20 24 (Col 4: 35-42) (Col 8: 55-60) disclose the inorganic insulation film comprises silicon oxide, silicon nitride and/or silicon oxynitride.

With respect to claims 3, 9, 25 (Col 5: 35-40) (Col 8: 55-60) disclose the inorganic insulation film form with the uses of plasma-assisted chemical vapor deposition.

With respect to claims 4, 5, 10, 11, 26-29 the claims require that the silicon nitride film formed by nonosilane and ammonia mixed with 50% hydrogen or nitrogen, and silicon oxynitride is formed by monosilane mixed with dinitrogen monoxide gas and nitrogen. Sakurai et al. '825 discloses the inorganic insulation film comprises silicon oxide, silicon nitride and/or silicon oxynitride (Col 4: 35-42). The method of forming a device is not germane to the issue of patentability of the device it self. Therefore, this limitation has not been given patentable weight.

With respect to claims 6, 12 the claims further require that the internal stress of the inorganic insulation film is equal to or less than 3×10^8 dyne/cm². It has been held that where the general conditions of a claim are is closed in the prior art, in this case is the inorganic insulation film; furthermore, it is inherently obvious, that all semiconductor layer(s) has some amount of strain and stress create by adjacent layers and discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Allowable Subject Matter

4. Claims 16-17, 21-22, 30-31 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The references of the record fail to teach or suggest:

Claims 16, 21, 31:

Wherein the first insulation and second silicon nitride insulation film, having lower amount of hydrogen in the first insulation film than the second insulation film.

Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harvey Minsun can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

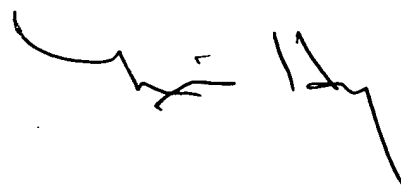
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Tuan N. Nguyen

A handwritten signature in black ink, appearing to read "Tuan Nguyen", with a long, sweeping underline.A handwritten signature in black ink, appearing to read "Lincoln H. Harvey", with a long, sweeping underline.

LINCOLN H. HARVEY
JULY EXAMINER